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Art. III.—*Three Species of the Genus Prasophyllum R. Br.*

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(Communicated by Prof. A. J. Ewart).

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The present paper deals with the forms grouped under *P. fuscum* R. Br., which appears to include three species; (1) the type form from Port Jackson, (2) *P. alpinum* R. Br. (*P. Tadgellianum* Rogers), and (3) the form known in South Australia as *P. fuscum*, which is distinct from both.

The typical *P. fuscum* is described as follows:—

> "Ovariis obovatis bractea late ovata acuta ter longioribus, perianthii foliolis acuminatis: Posticis basi cohaerentibus, labelli dimidio superiore duplo angustiore lineari-lanceolato: Marginibus simplicibus."

A perusal of Brown's descriptions and Bentham's footnote (under *P. fuscum*) in Flora Australiensis (Vol. VI., p. 340) indicates the extreme difficulty of arriving at a definite conclusion in respect to *P. fuscum*—and incidentally *P. alpinum*. Bentham's footnote (abridged) is: "Botanists are generally agreed in distinguishing two species, but not as to the characters assigned to them, derived for the most part from the examination of specimens few in number or from few localities. . . . Brown had only a rather large-flowered Port Jackson plant as *P. fuscum* and a small-flowered alpine Tasmanian plant as *P. alpinum*. . . . He describes the lateral sepals of *P. fuscum* as cohering at the base, those of *P. alpinum* as free; Archer (in Hook, f. 1, c. ii. 13) reverses these characters. I have found them almost constantly free, though closely overlapping each other at the base, rather shortly connate, and never connate in the middle as in *P. brevilabre*. . . . The colour of the flower, dusky brown-green in *P. fuscum*, light green in *P. alpinum*, appears also to be very inconstant."

Full particulars of Brown's types have been received from Mr. J. Ramsbottom, Keeper of Botany, British Museum, London, England (dated 1st April, 1932). These disclose the following interesting information relative to both *P. fuscum* and *P. alpinum*. The type material of *P. fuscum* R. Br. is Robert Brown's No. 5547 in the British Museum Herbarium. It comprises seven flowering stems mounted on a single sheet, which in addition bears two of Brown's own labels with nothing to indicate which specimens belong to each label. The labels read as follows:—

Prasophyllum fuscum, Prodr. 318. Port Jackson, 1805. R. Br.; and

Cranichoides fusca—Moist Meadows towards Georges River, October, 1803.

Mr. Ramsbottom adds the following:—

"The seven flowering stems vary considerably in height and robustness, ranging from about 15.5 to 33 cm. in height. The flower spikes vary from 4 to 8 cm. in height. A flower (from the tallest specimen with spike 8 cm. long) shows on dissection that the lateral sepals are very shortly connate at the base, apparently; this and a second flower from the same spike are enclosed for verification."

The two flowers mentioned above were in a splendid state of preservation, and the following particulars were gleaned:—

Flowers relatively robust, lateral sepals connate—in both flowers—a short distance from where they unite with the ovary (1-1.5 mm.); the labellum agrees exactly with that segment in the Victorian form. The removal of the pollinia intact from one flower, revealed clearly a short caudicle, and a bifid tip to the rostellum; the anther is as broad as long—very dark in colour—probably red-brown. (A type flower is shown—figure N.)

All available material of both *P. fuscum* and *P. alpinum* in the National Herbarium, Sydney, was examined. No specimens of *P. fuscum* from Port Jackson were noted, but two specimens of *P. fuscum* from Leura, in the Blue Mountains, were of interest, proving the existence of this plant outside the immediate vicinity of Sydney.

A well-conditioned specimen of *P. fuscum* is preserved in the National Herbarium, Melbourne. The label reads, "*P. brevilabre* Hk., J. H. Maiden, Director, Port Jackson. Sept., 1896."

Close inspection of the individual flowers of this specimen shows that the lateral sepals appear to be connate throughout, but are separable by a mere touch—to the immediate base in some flowers, and nearly to the base in others—as in the two type flowers. This particular specimen appeared identical in every particular with a form from the Keilor Plains referred to later on. The foregoing notes prove Robert Brown's description(1) of *P. fuscum* a correct one. This is in particular referable to the character of the lateral sepals (see also Bentham's remarks).

The true *P. fuscum* occurs not only in New South Wales and Victoria, but also in Tasmania. In all three States the lateral sepals show variation—united only at the extreme base or quite free—and careful tabulation proves these segments (in *P. fuscum*) just as often free as otherwise.

During the season of 1924 I discovered a solitary, most interesting specimen of *P. fuscum* near St. Albans (Keilor Plains, Victoria). It was growing within the shade of some eucalyptus trees. The lateral sepals were connate throughout (see figures). Close by, without shelter, other specimens were found, with these segments disunited, as is usual. Those of the first-mentioned specimen were united by a thin, almost transparent membrane, easily broken down by blowing upon, or when exposed to the drying winds; some little time later I found the inner margins of the separated sepals had folded inwards, revealing them as shown in Figure J.

The same thing occurs in many other species of this genus, where the union is not of a permanent character.

The examination of specimens in the herbarium of Dr. C. S. Sutton revealed both *P. fuscum* and *P. alpinum* from "Cradle Mountain and vicinity."

In the Rodway herbarium *P. fuscum* was noted, but not *P. alpinum*. C. French, Senr.(2) evidently refers to both *P. fuscum* and *P. alpinum* when he writes under *P. fuscum*:— "This species, formerly known by the name of *P. alpinum*, seems to be equally at home whether growing in moist flats or on the tops of our highest mountains."

The following description of *P. fuscum* is from Victorian (Keilor Plains) specimens; the strong, sweet fragrance of these specimens is akin to that diffused by the well-known brown-flowered boronia (*B. megastigma*).

PRASOPHYLLUM FUSCUM R. Br.

(Dusky Leek-orchid.)

A slender or moderately robust plant 14-30 cm. high; leaf lamina of variable length, erect, terete, dilated at the union of stem; flowers in a moderately loose spike, usually one-third length of plant, expanding in an irregular manner, usually from the centre outwards, green and brown, rarely wholly pale green; ovary oblong-ovate or ovate, on a short pedicel, subtended by a small acute bract, colour of bracts often pink, dorsal sepal erect oblong-lanceolate, acuminate, tip usually slightly deflexed, about 5-5.5mm. long; lateral sepals about same length as dorsal one, quite free, or definitely united at extreme base only; occasionally temporarily united almost their whole length by a thin filament; when free widely-spread, margins incurved, tips bidentate; petals 4-5 mm. long, linear, widespread, tips more or less obtuse; labellum on a broad claw, oblong-cuneate, recurved abruptly in its distal third, membranous part narrow, margins quite entire, pink or greenish-white; callous part viscid, green, conspicuously raised, especially beyond the bend, and extending

to within a short distance of extreme apex—callous part occupying almost the whole width in some flowers; lateral appendages of column with obtuse tips, shorter than rostellum; rostellum with a bifid apex, anther brownish or red-brown, broadly-ovate, reaching to about same height as appendages; pollen masses granular, very friable, easily removed, caudicle short.

Fl. Sept.-Nov. New South Wales, Victoria, Tasmania.

Victorian localities from where specimens have been obtained:—Tottenham, Sunshine, St. Albans (A. J. Tadgell, W. H. N.); Lara (Rev. A. C. F. Gates); Creswick (Dick Bond); Ararat (Lorna Banfield).

P. ALPINUM R. Br.

"Ovariis obovatis, bracteis subrotundis, pedicellis subaequantibus perianthii foliolis acutis: posticis approximatis, labelli dimidio superiore lineari-lanceolato, spica pauciflora, folio dimidium superius caulis aequante."

(1) The type material of *P. alpinum* R. Br. is Robert Brown's N. 5545 in the British Museum. It consists of two flowering stems, accompanied by the following label in Brown's handwriting:—"*Prasophyllum tabulare* in Summitati Montis Tabularis prope fl. Derwent."

(2) "The flowers in both specimens are withered and the fruit well developed. One of the plants is about 18.5 cm. tall, including the flower spike which is about 4-4.5 cm. long with seven flowers. The other plant has the upper part of the spike broken off, and is therefore of little value for dimensions; its stem measures 10.5 cm. up to the lowest bract, and above this are four remaining flowers. The material is so fragmentary that it is not possible to spare a flower, but from dissection it appears that the lateral sepals are connate for about two-thirds of their length as in the rough sketch appended." (See Fig. *d*, p. 35.)

The above particulars are somewhat surprising in view of Bentham's remarks.

The coloured plate of *P. alpinum* in Hooker's *Flora Tasmaniae* is naturally drawn from a Tasmanian specimen. In 1925, I suggested the alpine form (referred to by C. French, Senr.) as agreeing in every way with Hooker's plate. The general appearance impressed me considerably. Prior to this I had visited—on three occasions—the Baw Baw Range, where at 5,000 feet, and slightly higher altitudes, this *Prasophyllum* occurs abundantly, between Talbot Peak (Mt. Erica) and Mt. Whitelaw. They were found in a variety of situations; bordering the morasses on the dry open levels and rises, also on the granite-strewn slopes, often in crevices, and under the snow-gums. It was thus possible to note the varying colour-schemes in specimens of all stages, from that of the immature plant to those well

in fruit. The Baw Baw specimens are identical with those found on Mt. Bogong, Hotham, &c. In fact, this little *Prasophyllum* is to be found abundantly in practically all our south-eastern alpine regions.

Rogers(3) referred to a *Prasophyllum* from the Australian Alps (Mts. Bogong, Hotham, Kosciusko, &c.) as a probable variety of *P. Frenchii* F.v.M. It was raised later to specific rank as *P. Tadgellianum,*(4) being then recorded for Victoria and New South Wales, but not for Tasmania. In view of the information already given, there can be little doubt that *P. alpinum* R. Br. and *P. Tadgellianum* Rogers are one and the same species.

Though FitzGerald unfortunately did not live to delineate *P. fuscum* in his great work (Australian Orchids, Vols. 1-2) he figures a form under *P. alpinum* (see Vol. 2), but his interpretation can with confidence be referred to as *P. gracile* Rogers. Though he gives the lateral sepals as "quite free" in opposition to "connate" in the original description of *P. gracile*(5), my experience with *P. gracile* in Victoria, Tasmania, and New South Wales proves them to be very often free to the extreme base. *P. gracile* may also be Bentham's var. *grandiflorum*(6).

As a fully-detailed description of *P. alpinum* appears under *P. Tadgellianum*(4), only a few characters need be given.

A robust, dwarf species with comparatively few flowers; leaf often longer than the spike; flowers pale yellowish-green, sometimes almost colourless, or green with light-brown, or bold chocolate-brown or purplish-red markings; lateral sepals consistently connate to about the middle (see figures). Fragrant. Closely related to *P. fuscum* R. Br. Fruit often remarkably turgid. Fl. Dec., Feby., or until early March. Victoria, New South Wales, Tasmania.

Hooker in Fl. Tas. (p. 12) writes: "The lateral sepals are free or rarely united at the base or to the middle, and the labellum is often pubescent." Hooker doubtless includes several distinct species here, including *P. Brainei* Rogers and *P. gracile* Rogers, both of which appear to be fairly plentiful in parts of Tasmania, though not as yet placed on their records.

Lindley (*Orchidaceous Plants*, p. 315) refers to the upper half of the labellum as "undulate (*sic*)."

In reference to the form known in South Australia as *P. fuscum*, which is here described as a new species, Rogers writes: "The specimens sent to you represent the plant which has always been known by that name in this State (S.A.). The determination was made by F. v. Mueller, and has been accepted by Prof. Tate, and endorsed by FitzGerald who visited us about 1881 or 1882. It does not follow, however, that their determination is absolutely trustworthy. The fragrance of the South

Australian form is usually powerful and pleasant when fresh, but as this appears to be dependent on weather or some unknown conditions it was thought better not to include it in the description."

My own experience with *P. gracile* Rogers in Victoria and New South Wales is similar. Sometimes it is scentless, occasionally a trace is perceptible, and sometimes a specimen may diffuse a very acute and delightful fragrance. Scent is unreliable as a distinguishing factor in many instances.

PRASOPHYLLUM PALLIDUM, n. sp.

P. fuscum. *Trans. Roy. Soc. S.A.*, xxxiii., 215, Pl. 13A, and Fl. of Sth. Aust. (J. M. Black), Part I., 1927, R. S. Rogers.

Planta terrestris, gracilis, 15-30 cm. alta; folium teres, vaginatum erectum, saepe inflorescentiam excedens; spica laxa; flores 15-30 virides vel flavo-virides, pedicelli perbreves; segmenta-perianthi glandulosa; ovaria turgida; sepalum-dorsale erectum, ovatum lanceolatum sub-concavum, acuminatum, circiter 5-6 mm. longum; sepala-lateralia parallela, lanceolata, concava postica basi cohaerentia circiter 6.5-7 mm. longa; petala semi-erecta, patentia vel incurva, linearia-obtusiuscula circiter 4-5 mm. longa; labellum sessile, erectum, abrupte recurvum, ovate-cuneatum, marginibus crenulatis, brevissime ciliatis; pars callosa, ovate-lanceolata, virides; pars membranacea latiuscula alba; laminae-basi subulata-lanceolata appendice; columnae laciniae, laterales oblongae, apicibus obtusis, obliquis; anthera parva; pollinia granulosa; caudicula longa.

A slender species, almost wholly green or yellowish-green, 15-30 cm. in height; leaf terete, erect, of varying length; flowers 15-30 green or yellowish-green, in a long loose spike; pedicels short; ovary turgid, standing well out from axis; perianth-segments glandular; dorsal sepal erect, ovate-lanceolate, somewhat concave, acuminate, about 5-6 mm. long; lateral sepals parallel, lanceolate-concave, connate at the extreme base only, in some flowers quite free, 6.5-7 mm. long; petals semi-erect, spreading or incurved, tips more or less obtuse, about 4-5 mm. long; labellum sessile, erect, then recurved abruptly about the middle, ovate-cuneate, margins crenulate very shortly ciliate; callous part ovate-lanceolate, green, not conspicuously raised, extending to within a short distance of tip; membranous part comparatively broad, white; base of labellum-lamina with a long (usually) subulate-lanceolate appendage (though not recorded by Dr. Rogers in (5), this unique feature is given prominence in his more comprehensive description of "*P. fuscum*" in Black's *Flora of South Australia*, 1933, p. 127); column wings broadly-oblong, tips obtuse, oblique; anther shorter than rostellum; pollinia very granular, with a rather long caudicle; rostellum

with an emarginate apex. Fragrant. The specific name is in reference to the pale colour of the flowers. Fl. Sept.-Nov.

South Australia, Victoria (Devil's Garden, near Pomonal). This species was first discovered in Victoria by Miss Lorna Banfield, of Ararat. (Oct.-Nov., 1932.)

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(1) Brown, Robert. *Prodromus Florae Novae Hollandiae* (1810), p. 318.

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(3) Rogers, R. S. Contributions to the Orchidology of Australia and New Zealand. *Trans. Roy. Soc. S.A.,* xlvi., p. 153, 1922.

(4) Rogers, R. S. Contributions to the Orchidaceous Flora of Australia. *Ibid.,* xlvii., p. 338, 1923.

(5) Rogers, R. S. A critical review of South Australian Prasophylla, &c. *Ibid.,* xxxiii., p. 213, Pl. xii., A, 1909.

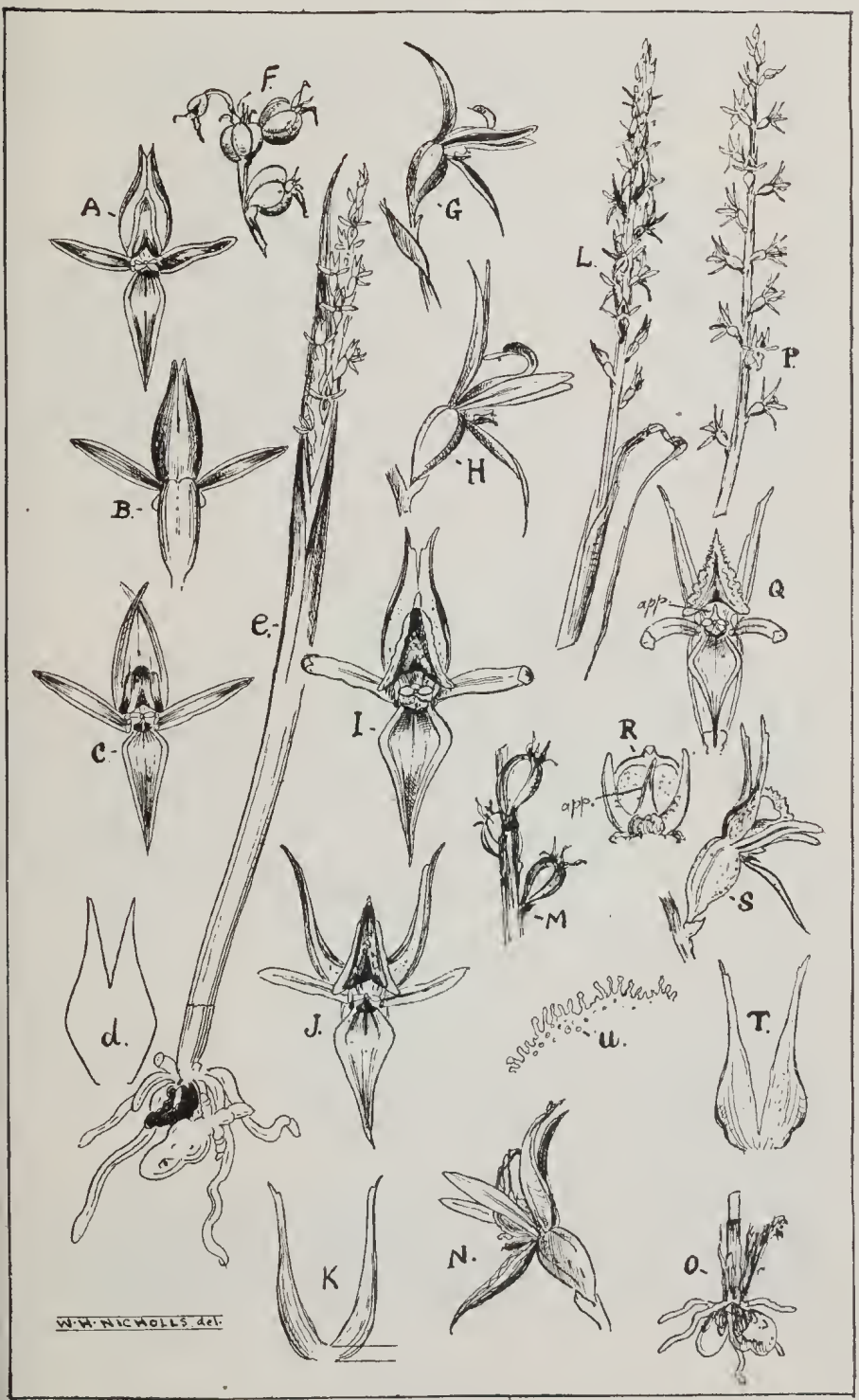
(6) *Flora Australiensis,* p. 340, under *P. fuscum.*

Prasophyllum Spp.

A—G. *P. alpinum* R. Br. A, Flower from front; B, from above; C, from front-mature stage; D. Conjoined sepals drawn from a type flower; E. Typical specimen with flowers. Spike just emerging from scape (note the tubers, &c., characteristic of moist soil conditions); F., Fruit; G, Flower from side.

H—O. *P. fuscum* R. Br. H, Flower from side; I, from front, lateral sepals temporally united; J, Lateral sepals free; K, Lateral sepals united at extreme base; L, Spike of flowers, &c.; M, Fruit; N, A type flower; O, Tubers.

P—U. *P. pallidum,* n. sp. P, Spike of flowers; Q, Flower from front; R, Column, showing appendage; S, Flower from side; T, Lateral sepals from above; U, Ciliate margins of labellum-lamina.



Prasophyllum spp.